Claims

[c1]   1. A method for correcting misregistration of printing separations, said method comprising the steps of:
paint each object;
create a trap zone relative to each adjacent object;
evaluate the ink values of each object; and
determine the direction of trapping for each of said trap zones based on said evaluations of said ink values of each object.

[c2]   2. The method of claim 1 wherein said method further includes the step of:
storing each object in the order of which it is created.

[c3]   3. The method of claim 1 wherein said step of creating a trap zone includes:
defining the size of said trap zones.

[c4]   4. The method of claim 1 wherein said step of evaluating the ink values of each of said objects includes the steps of:
evaluating the luminance of each of the ink values of each of said objects.

[c5] 5.The method of claim 1 wherein said step of evaluating the ink values of each of said objects includes the steps of:

evaluating the total luminance of each of the two colors involved in the trapping relationship.

[c6] 6.The method of claim 5 wherein said step of evaluating the total luminance for each of the two colors involved in the trap relationship by assessing the RGB values of each composite color by the formula (.3 Red plus .59 Green plus .11 Blue) equals the total luminance.

[c7] 7.The method of claim 1 wherein said step of evaluating the ink values of each of said objects includes the steps of:

evaluating the partial luminance of each of the ink values of each of the composite colors involved in the trap relationship.

[c8] 8.The method of claim 7 wherein said evaluation of the partial luminance of each of the ink values of each of said objects assesses the RGB value of a given ink by the formula (.3 Red plus .59 Green plus .11 Blue) equals the luminance of each ink.

[c9] 8.The method of claim 1 wherein said step of evaluating the ink values of each of the colors involved in the trap–

ping relationship includes the step of:

determining the partial gray of each of the composite colors.

[c10] 9.The method of claim 1 wherein said step of evaluating the ink values of each of the colors involved in the trapping relationship includes the step of:

determining the partial gray of each of the composite colors by applying the formula of a given ink component in the composite color as (1 minus the partial luminance value of the ink) equals the partial gray.

[c11] 10.The method of claim 1 wherein said step of evaluating the ink values of each of the colors involved in the trapping relationship includes the step of determining the principle gray threshold of the composite color.

[c12] 11.The method of claim 1 wherein said step of evaluating the ink values of each of the colors involved in the trapping relationship includes the step of:

determining the principle gray threshold of the composite color by dividing the total gray of the composite color by combination of the total number of the inks of the composite color plus an offset value of less than .1.

[c13] 12.The method of claim 1 wherein said step of determining the direction of trapping for each trap zone in-

cludes the step of:

determining the direction of each of the inks of the foreground object relative to the background object based on the luminance of the foreground object compared to the background object.

13. The method of claim 1 wherein said step of determining the direction of trapping for each trap zone includes the step of:

determining the direction of each of the inks of the foreground object relative to the background object based on the rich black values of the objects.

14. The method of claim 1 wherein said step of determining the direction of trapping for each trap zone includes the step of:

determining the direction of each of the inks of the foreground object relative to the background object based on the principle gray values of the objects.

15. The method of claim 1 wherein said step of determining the direction of trapping for each trap zone includes the step of:

spreading the foreground object relative to the background object when the luminance of the foreground object is greater than the background object unless the partial gray value of at least one ink component of either

the foreground object or the background object is greater than the partial gray threshold in which case that object will knockout the other object for that ink component.

[c17] 16. The method of claim 1 wherein said step of determining the direction of trapping for each trap zone includes the step of:

spreading the foreground object relative to the background object when the luminance of the foreground object is greater than the background object unless the partial gray value of at least one ink component of either the foreground object or the background object is greater than the rich black threshold and at least one ink component of that object is less than the rich black threshold in which case that object will overprint the other object for that ink component.

[c18] 17. A method for correcting misregistration of printing separations, said method comprising the steps of:

paint each object;

create a trap zone relative to each adjacent object;

evaluate the ink values of each object to determine the luminance of each color, the partial luminance of each ink component of each color, the partial gray value of each ink component of each color; and

determine the direction of trapping for each of said trap

zones based on said evaluations of said ink values of each object and upon thresholds for the partial gray and rich black.

[c19] 18. The method of claim 17 wherein said method further includes the step of:
storing each object in the order of which it is created.

[c20] 19. The method of claim 17 wherein said step of creating a trap zone includes:
defining the size of said trap zones.

[c21] 20. The method of claim 17 wherein said step of evaluating the total luminance for each of the two colors involved in the trap relationship by assessing the RGB values of each composite color by the formula (.3 Red plus .59 Green plus .11 Blue) equals the total luminance.

[c22] 21. The method of claim 17 wherein said evaluation of the partial luminance of each of the ink values of each of said objects assesses the RGB value of a given ink by the formula (.3 Red plus .59 Green plus .11 Blue) equals the luminance of each ink.

[c23] 22. The method of claim 17 wherein said step of evaluating the ink values of each of the colors involved in the trapping relationship includes the step of:
determining the partial gray of each of the composite

colors by applying the formula of a given ink component in the composite color as (1 minus the partial luminance value of the ink) equals the partial gray.

[c24] 23. The method of claim 17 wherein said step of evaluating the ink values of each of the colors involved in the trapping relationship includes the step of:
determining the principle gray threshold of the composite color by dividing the total gray of the composite color by combination of the total number of the inks of the composite color plus an offset value of less than .1.

[c25] 24. The method of claim 17 wherein said step of determining the direction of trapping for each trap zone includes the step of:
determining the direction of each of the inks of the foreground object relative to the background object based on the luminance of the foreground object compared to the background object.

[c26] 25. The method of claim 17 wherein said step of determining the direction of trapping for each trap zone includes the step of:
determining the direction of each of the inks of the foreground object relative to the background object based on the rich black values of the objects.

[c27] 26. The method of claim 17 wherein said step of determining the direction of trapping for each trap zone includes the step of:
determining the direction of each of the inks of the foreground object relative to the background object based on the principle gray values of the objects.

[c28] 27. The method of claim 17 wherein said step of determining the direction of trapping for each trap zone includes the step of:
spreading the foreground object relative to the background object when the luminance of the foreground object is greater than the background object unless the partial gray value of at least one ink component of either the foreground object or the background object is greater than the partial gray threshold in which case that object will knockout the other object for that ink component.

[c29] 28. The method of claim 17 wherein said step of determining the direction of trapping for each trap zone includes the step of:
spreading the foreground object relative to the background object when the luminance of the foreground object is greater than the background object unless the partial gray value of at least one ink component of either the foreground object or the background object is

greater than the rich black threshold and at least one ink component of that object is less than the rich black threshold in which case that object will overprint the other object for that ink component.

[c30]